Denali Award Number 01533-00 Hyder Radar Traffic Sign Deployment Hyder Community Association (HCA) Hyder, AK

PROJECT EVALUATION

Method

Pre-Sign Installation Speed Sampling

We collected traffic speed data at several points along the main road through town before the signs were installed. We used a hand-held Bushnell Speed Radar Gun, Model 101911. Sampling periods were 1 or 1.5 hours long, during the first week of July 2017 and at the end of April /beginning of May 2018, immediately before the signs were installed. The data were combined into 3 groups according to the closest of the 3 sign sites, and having the same direction of traffic flow that is now monitored by the radar speed sign.

Radar Speed Sign Sampling

We used data collected and stored by the signs, after all the start-up problems were solved and after traffic volume began increasing with tourists. We downloaded data from each sign to a mobile device via the sign's Wi-Fi, and then transferred the data to a computer for analysis using Excel. We chose to analyze 2 weeks of data, June 17-23 and June 24-30. Data are downloaded from the signs in the form of daily reports (see example, Table 1), which we combined into weekly summaries for each site (see example, Table 2). Tables 3, 4, and 5 are data compilations for sites 1, 2, and 3 respectively.

Results

Pre-sign installation sampling was not as extensive as planned. Traffic volume was low, especially during the spring 2018 sampling just prior to the sign installation, and it was difficult to find volunteers for such a boring assignment. The spring sampling occurred when the only traffic of note was mineworkers heading to work in the morning and returning in evening; sampling targeted those time intervals. Data collected with the speed radar gun consists of only 1 data point for each vehicle: peak speed.

The radar signs also record peak speed for each vehicle. However, the daily data from the signs is summarized in half hour intervals, and only the peak speed for each half hour is displayed. In Tables 3 - 5 the radar gun peak speeds are reported by number of vehicles exceeding 20 mph by the amounts indicated (1-5 over; 6-10 over; etc.), but in the radar sign weekly summaries, peak speeds are reported by the number of half hour intervals where the peak speed fell into these categories (1-5 over, 6-10 over, etc.).

In addition to peak speed, the radar signs also calculate an average speed for each vehicle. Average speed is perhaps a more useful description of traffic flow, however we

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have no pre-sign data with which to compare it. Weekly average speeds were 20 mph¹ or less at sign sites 2 and 3 during both of the weeks analyzed. At Site 2 the percent of speeders seems to have dropped substantially after the signs were installed (looking very broadly at the pre- and post- radar sign data). Site 1 registered weekly average speeds of 24 and 23 mph; this site is at the north end of town where traffic is slowing from a 35 mph zone to 20 mph.

Although the data collected for evaluation did not serve us very well, several residents have noticed and commented that traffic is generally going slower this summer than it has in past years. And perhaps this subjective observation is our best indicator of project success.

Our two portable signs are temporarily in use at the Fish Creek Wildlife Viewing Site, operated by the U.S. Forest Service, 3 miles north of town. Forest Service staff have not yet downloaded any data, but they report that most traffic is moving slower than in previous years.

¹ 20 mph is the posted speed limit in Hyder

Table 1. Sample of daily data from radar sign

Period St	atis 6/23/2018	The second of th			Daily Statistic	CS	
Time	# vehicles	#violators	sum of avg s	peak speed	Avg counts	Peak counts	Summary
00:00	0	0		0	Control of the contro	19	226
00:30	0	0	0	0	69	43	34
01:00	0	0	0	0	92	81	15.04
01:30	0	0	0	0	26	64	3630
02:00	O	0	0	0	6	13	36
02:30	0	0	0	0	1	5	20
03:00	0	0	0	0	1	0	24
03:30	O	0	0	0	. 0	1	
04:00	0	0	0	0	0	0	
04:30	O	0	0	0	0	0	AND THE STATE OF T
05:00	0	0	0	0	0	0	
05:30	0	0	0	0	0	0	to resident to the second service allowed the local control of the
06:00	1	0	19	19			ti de promision de companya
06:30	0	0	0	0	No that which was not not the street or not not the was the second of southern		
07:00	8	2	152	26			
07:30	9	1	146	22	and and objective of interpretations and are the treation of contract of the treation of the t	excess of selected and selection of the control of	antining and the second se
08:00	0	0	0	0			
08:30	4	0	73	19			
09:00	9	2	141	22			
09:30	6	0	95	20	Commence of the second	**************************************	TO THE NAME OF THE PROPERTY OF
10:00	9	1	151	28	TO THE REAL PROPERTY OF THE PR		The second of th
10:30	6	1	99	23		i van de mande de transferiente de transferiente mentre est de la montre de transferiente de transferiente de En la montre de la montre de transferiente de la montre de transferiente de la montre de transferiente de transferiente de la montre della montre della montre de la montre de la montre de la montre della montre	
11:00	14	1	193	23			
11:30	11	1	174	22		ne y en la crusimiente de la company monera en	
12:00	13	4	226	27		and the same of th	
12:30	14	0	193	20		A CONTRACTOR OF THE CONTRACTOR	Principal Control of the State
13:00	11	1	168	22			
13:30	11	2	168	27			
14:00	7	0	84	18			AND
14:30	7	0	99	19	*	The state of the s	
15:00	10	4	202	32		1	
15:30	15	2	216	36	annual management and a second a		
16:00	4	1	63	24		en grif de tre tig (absorption de mais mais en de manuel (de est, et lant, et lant, et lant, et lant, et la de	
16:30	5	1	91	24		- Carried - Carr	The College of the Co
17:00	13	3	230	29	1		
17:30	9	1	142	22			
18:00	3	1	42	21		a cur mey con 4 demonstrating facilità conditions assente, estre a 7 mail 200 (1975/2017) participation (1975/2017)	Makes resided integrated by Springs Andrews (in the case of transport parties)
18:30	O.	0	0	0	No.		
19:00	12	3	225	24	Conservation or training of Architecture in a Publishing Architecture and Architecture in Arch	MCCCCCC sourcement recovered with the control of th	
19:30	12	2	188	22			Continues and State of Laboratory and Continues of
20:00	2	0	32	16			
20:30	0	O	0	0			
21:00	0	0	0	0	1		
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22:00	1	0	18	18	The section of the se		Parkins The World Combined the services and Property Street, S
22:30	0	0	0	0			
23:00	0	O	0	0			The second of th
23:30	0	0	0	0			TOTAL CONTROL OF THE

Table 1. Example of weekly summary of data from a radar sign

		SITE 1 WEEKLY S				
Period begin		sum of avg speeds avg	speed	#violators	peak speed	%violators
00:00	0			0		
00:30	2		24.0	2	25	100.0
01:00	2	48	24.0	2	25	100.0
01:30	0	0		0		
02:00	0	0		0		
02:30	1	30	30.0	1	30	100.0
03:00	0	0		0		
03:30	0	0		0		
04:00	1	22	22.0	1	22	100.0
04:30	0	0		0		
05:00	4	103	25.8	4	33	100.0
05:30	41	924	22.5	28	41	68.3
06:00	5	127	25.4	4	33	80.0
06:30	2	52	26.0	2	29	100.0
07:00	15	355	23.7	9	38	60.0
77:30	20	507	25.4	17	38	85.0
08:00	13	269	20.7	8	29	61.5
08:30	19	450	23.7	11	41	57.9
9:00	29	680	23.4	20	41	69.0
09:30	28	686	24.5	22	39	78.6
10:00	32	783	24.5	25	40	
						78.1
10:30 11:00	28	696	24.9	18	40	64.3
	29	712	24.6	19	40	65.5
1:30	36	797	22.1	23	31	63.9
2:00	28	752	26.9	22	42	78.6
.2:30	74	1688	22.8	43	42	58.1
13:00	50	1163	23.3	36	41	72.0
13:30	41	903	22.0	21	33	51.2
4:00	70	1567	22.4	38	35	54.3
14:30	43	1020	23.7	29	46	67.4
15:00	50	1257	25.1	38	44	76.0
5:30	55	1380	25.1	41	41	74.5
16:00	61	1475	24.2	42	43	68.9
.6:30	31	803	25.9	26	45	83.9
7:00	50	1243	24.9	41	43	82.0
7:30	81	1821	22.5	50	39	61.7
8:00	25	572	22.9	16	34	64.0
8:30	27	632	23.4	17	39	63.0
9:00	18	364	20.2	11	31	61.1
9:30	13	295	22.7	8	31	61.5
0:00	13	275	21.2	8	31	61.5
0:30	10	197	19.7	5	29	50.0
1:00	16	385	24.1	10	36	62.5
1:30	5	118	23.6	4	31	80.0
2:00	2	75	37.5	2	43	100.0
2:30	5	158	31.6	5	43	100.0
3:00	0	0		0		
3:30	2	62	31.0	2	35	100.0
OTAL/AVG	1077	25494	24	731		68

Site1 Wk 1	# vehicles	1077
	avg speed	24
	% violators	68

peak speeds over 20 mph by daily half hour intervals

1-5 over 41 6-10 over 70 11-20 over 70 >20 over 16

197 half hour intervals with violators *

Table 3. Data compilation, Site 1

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	eak Speed	33	46	37
	# Vehicles P	24	6	
	Interval	1 hr	1.5 hr	1.5 hr
	Stop Time	19:15	19:00	8:15
	Start Time	18:15	17:30	6:45
Travel		S	S	S
:0	Location	Hyder Ave & 9th St.	Site 1	Site 1
Sampling Info:	Date	7/6/17	4/27/18	5/4/18

SITE 1 SUMMARY	
# vehicles	45
% violators*	78
*based on peak speed	
peak speeds over 20 mph by vehide count	vehicle count
1-5 over	18
6-10 over	8
11-20 over	8
<20 over	щ
	35 vehicles

RADAR SIGN DATA

JUNE 17-23	
# vehicles	1077
avg speed	24
% violators*	89
*based on average speed	pe
peak speeds over 2	peak speeds over 20 mph by half hour intervals
1-5 over	41
6-10 over	70
11-20 over	70
>20 over	16
	197 half hour intervals
336 total half hour	336 total half hour intervals in a week

JUNE 24-30	
# vehicles	1039
avg speed	23
% violators*	63.5
*based on average speed	pa
peak speeds over 2	peak speeds over 20 mph by half hour intervals
1-5 over	44
6-10 over	65
11-20 over	72
>20 over	ıOı
	186 half hour intervals

Table 4. Data compilation, Site 2

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	Peak Speed	34	33	30
	# Vehicles	16	11	13
	Interval	1 hr	1.5 hr	1.5 hr
			8:15	
	Start Time	16:50	6:45	17:30
Travel	Direction	z	z	z
.o.	Location	Hyder Ave @ school	Site 2	Site 2
Sampling Info:		7/3/17	4/30/18	5/2/18

SITE 2 SUMMARY		
# vehicles	40	
% violators*	85	
*based on peak speed		
peak speeds over 20 mph by vehicle count	h by vehicle count	
1-5 over	16	
6-10 over	12	
11-20 over	9	
<20 over	OI	
	34 vehicles	

RADAR SIGN DATA

JUNE 17 - 23	
# vehicles	1345
avg speed	17
% violators*	22
*based on average speed	
peak speeds over 20 mph by half hour intervals	y half hour intervals
1-5 over	111
6-10 over	31
11-20 over	7
>20 over	Ol
	149 half hour intervals
336 total half hour intervals in a week	in a week

					S						
					peak speeds over 20 mph by half hour intervals					161 half hour intervals	
	1384	16.8	22.3	e speed	er 20 mph b	128	23	10	01	161 h	
JUNE 24 - 30	# vehicles	avg speed	% violators*	*based on average speed	peak speeds ov	1-5 over	6-10 over	11-20 over	>20 over		

Table 5. Data compilation, Site 3

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	Peak Speed	33	28	28	27
	# Vehicles	33	42	16	18
	Interval	1 hr	1 hr	1.5 hr	1.5 hr
	• ,	16:25			
		15:25			17:00
Travel	Direction	z	z	Z	z
fo:	Location	7/3/17 Int'l Ave @ church	Premier Ave & 4th St.) Site 3) Site 3
Sampling Info:	Date	7/3/17	7/8/17	5/8/2018(a) Site 3	5/8/2018(b) Site 3

SITE 3 SUMMARY	
# vehicles	109
% violators*	74
*based on peak speed	
peak speeds over 20 mph by vehicle count	h by vehicle count
1-5 over	52
6-10 over	26
11-20 over	8
<20 over	0
	81 vehicles

RADAR SIGN DATA

-		
3	JUNE 17 - 23	
#	# vehicles	1767
9	avg speed	20
%	% violators*	41
*	*based on average speed	
be	peak speeds over 20 mph by half hour intervals	y half hour intervals
	1-5 over	99
	6-10 over	75
	11-20 over	39
	>20 over	7
		187 half hour intervals
33	336 total half hour intervals in a week	s in a week

JUNE 24 - 30	
# vehicles	1887
avg speed	19
% violators*	37.1
*based on average speed	pee
peak speeds over	peak speeds over 20 mph by half hour intervals
1-5 over	69
6-10 over	75
11-20 over	40
>20 over	2
	186 half hour intervals